	Application No.	Applicant(s)
Notice of Allowability	10/643,312	NAKAMURA ET AL.
	Examiner	Art Unit
	Hetul Patel	2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *02/21/2006*.

2. ☒ The allowed claim(s) is/are *1,3-7,10 and 11; renumbered as 1-8, respectively*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some*   c) ☐ None of the:

       1. ☒ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

       3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

       1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
    Paper No./Mail Date _____.

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____.

DETAILED ACTION

1.   This action is responsive to communication filed on February 21, 2006. This

amendment has been entered and carefully considered.   Claims 1, 10 and 11 are

amended and claims 1, 3-7, 10 and 11 are presented again for examination.

2.   Claims 1, 3-7, 10 and 11 are allowed and renumbered as 1-8, respectively.

EXAMINER'S AMENDMENT

3.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

4.   Authorization for this examiner's amendment was given in a telephone interview

with George B. F. Yee (Reg. No. 37,478) on 03/03/2006.

5.   The application has been amended as follows:

CLAIM 1 (Currently Amended):

A disk control system that receives a process command for writing or reading of

data from an information processing device, and performs a write or read process of

data with respect to [[a]] one or more logical devices corresponding to a logical unit

specified by said process command, comprising:

means for managing[[,]] at least one logical device, said at least one logical
device being a logical storage region that has been set in a storage region provided by
a disk drive;

means for storing a correspondence between said at least one logical device and
at least one logical unit, said at least one logical unit being a storage region that has
been set logically;

means for assigning, when a first process command has been received for a first
logical unit to which no logical device has been assigned [[to said first logical unit]] and
said first process command requires performing a process with a logical device, a first
logical device to said first logical unit and for performing processing with regard to said
first logical device; and

means for responding to said information processing device, when a second
process command that does not cause an input/output process with regard to a second
logical device has been received from said information processing device, by
performing said second process command without performing said logical device
assignment.

CLAIM 3 (Currently Amended):

A disk control system according to claim 1, further comprising:

means for assigning [[a plurality of said]]one or more logical devices to [[one of

said]] a logical unit[[s]]; and

means for assigning to [[that]] said logical unit only a number of [[said]] logical

devices that is necessary in order to perform the processing corresponding to said first

process command.

CLAIM 4 (Currently Amended):

A disk control system according to claim 1, further comprising:

means for sending to said information processing device a message indicating

that said first process command cannot be processed, if there is no logical device that

can be assigned to said at least one logical unit.

CLAIM 10 (Currently Amended):

A control method for a disk control system that manages, logical devices, which

are logical storage regions that have been set in a storage region provided by a disk

drive, that stores a correspondence between said logical devices and a plurality of

logical units, said logical units being storage regions that have been set logically, that

receives a process command that has been sent from an information processing device,

and that performs processing with regard to a logical device corresponding to the logical

unit specified by said process command, the control method comprising:

a first step of receiving a first process command for a first logical unit;

a second step of determining whether a first logical device has been assigned to

said first logical unit; and

if in said second step a first logical device is assigned to said first logical unit, a third step of performing with regard to said first logical device said first process command, and, if in said second step no logical device is assigned to said first logical unit and said first process command causes an input/output process with regard to ~~first~~ ~~said~~ said first logical device, then assigning a logical device to said first logical unit and performing with regard to said first logical device said first process command;

a fourth step of receiving a second process command for a second logical unit;

a fifth step of determining whether a second logical device has been assigned to said second logical unit; and

if no logical device has been assigned to said second logical unit and said second process command is a command that does not cause an input/output process with regard to second said logical device, then performing second process command without assigning a logical device to said second logical unit.

CLAIM 11 (Currently Amended):

A control method for a disk control system that manages, as units, logical devices, which are logical storage regions that have been set in a storage region provided by a disk drive, that stores a correspondence between said logical devices and logical units, said logical units being storage regions that have been set logically, that receives a process command that has been sent from an information processing device, and that performs processing with respect to a logical device corresponding to the logical unit specified by that process command, the control method comprising, when a process command has been received for a logical unit:

if [[a]] said logical device has been assigned to said logical unit, then performing

with regard to said logical device a process corresponding to said process command;

if no logical device has been assigned to said logical unit and said process

command is a command that does not cause a process with regard to said logical

device, then performing a process corresponding to said process command without

assigning a logical device to said logical unit; and

if no logical device has been assigned to said logical unit and said process

command is a command that causes a process with regard to said logical device, then

assigning a logical device to said logical unit and performing with regard to said logical

device a process corresponding to said process command.

REASONS FOR ALLOWANCE

6.   The following is an examiner's statement of reasons for allowance:

The prior arts of record do not teach nor suggest, either alone or in combination,

all the limitations of the amended claims of the current invention (claims 1, 10 and 11);

particularly a disk control system and method in which (i) if no logical device is assigned

to a logical unit and a process command that does not cause an input/output process

with regard to the logical device, then the process command is performed without

assigning the logical device to the logical unit; and (ii) if no logical device is assigned to

a logical unit and a process command that does cause an input/output process with

regard to the logical device, then the process command is performed after assigning the

logical device to the logical unit.

Claims 3-7 further limit the allowable independent claim 1. These claims are therefore allowable for the same reason as set forth supra.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hetul Patel whose telephone number is 571-272-4184. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MATTHEW KIM
ADVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100